Alternative Energies
Formal and Informal Experiences

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ILLINOIS GREEN GOVERNMENTS COORDINATING COUNCIL

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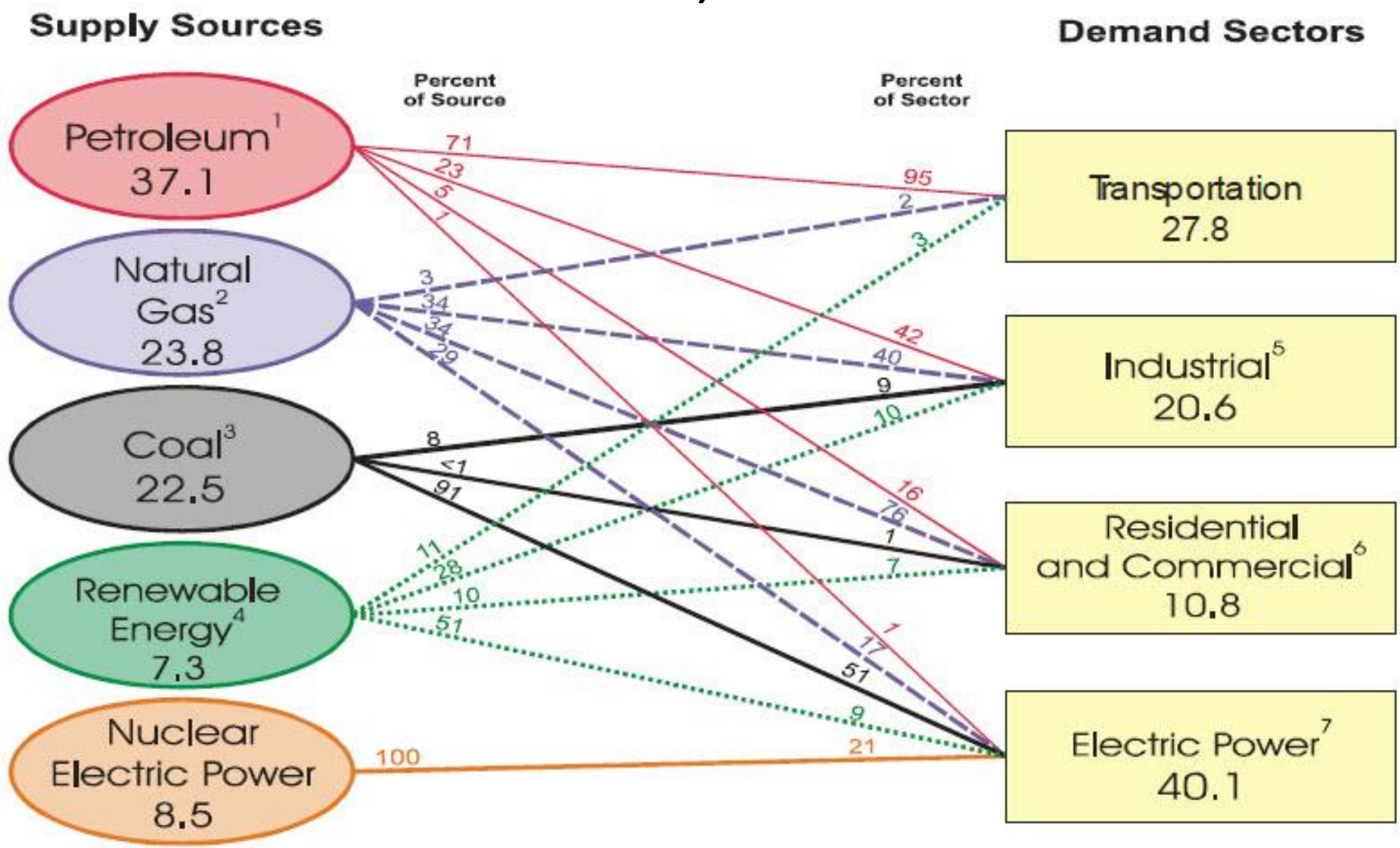
Why we need to be concern about Energy?

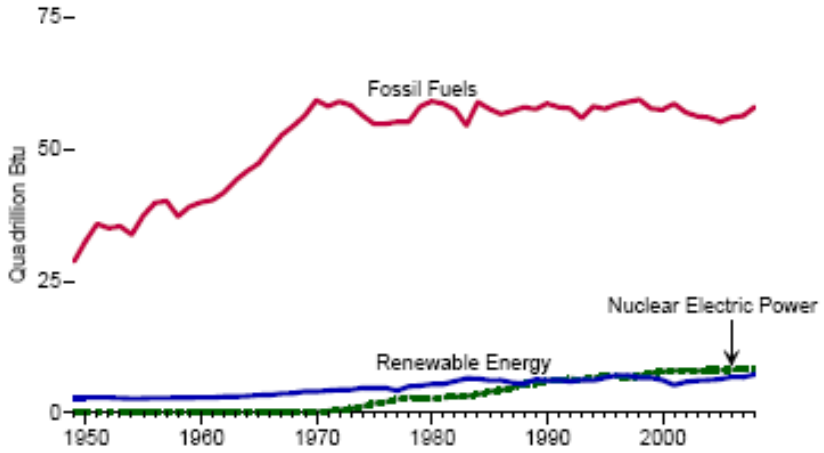
U.S. Primary Energy Consumption by Source and Sector, 2008



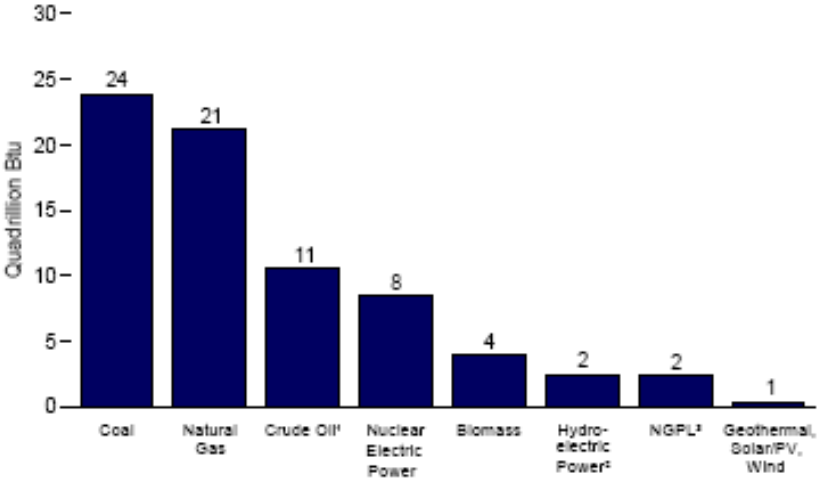
http://www.eia.doe.gov/emeu/aer/pecss_diagram.html

Figure 1.2 Primary Energy Production by Source

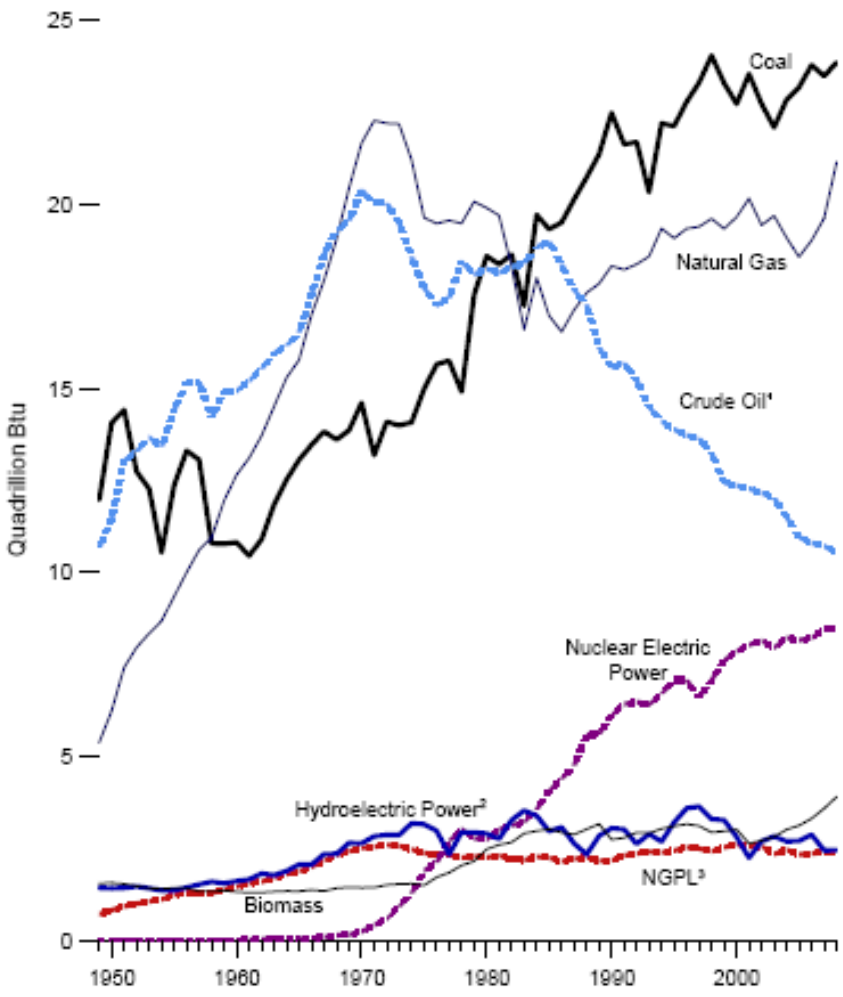
By Source Category, 1949-2008



By Source, 2008



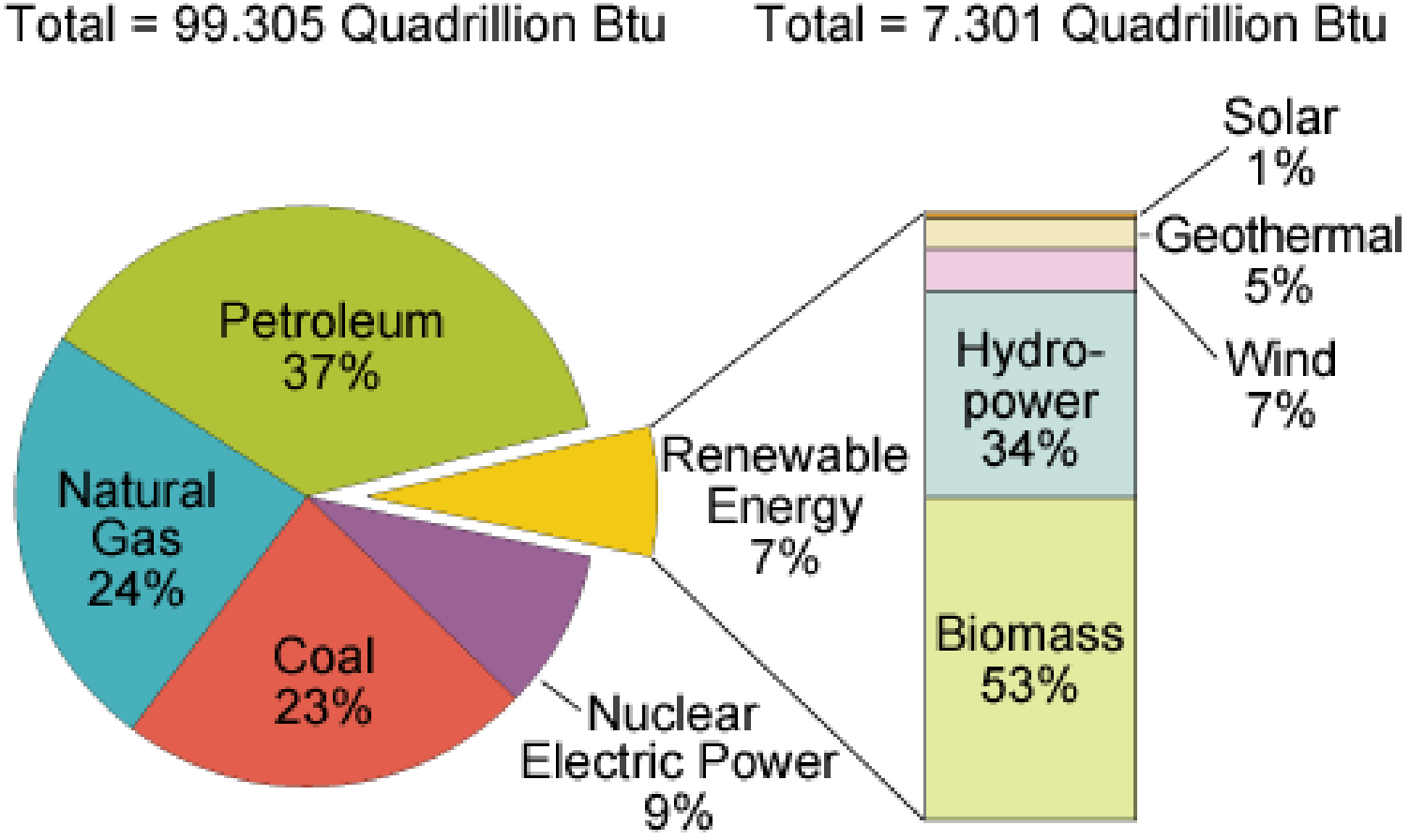
By Major Source, 1949-2008



¹ Includes lease condensate.
² Conventional hydroelectric power.
³ Natural gas plant liquids.
Source: Table 1.2.

http://www.eia.doe.gov/emeu/aer/pdf/pages/sec1_6.pdf

Renewable Energy Plays a Role in the Nation's Energy Supply, 2008

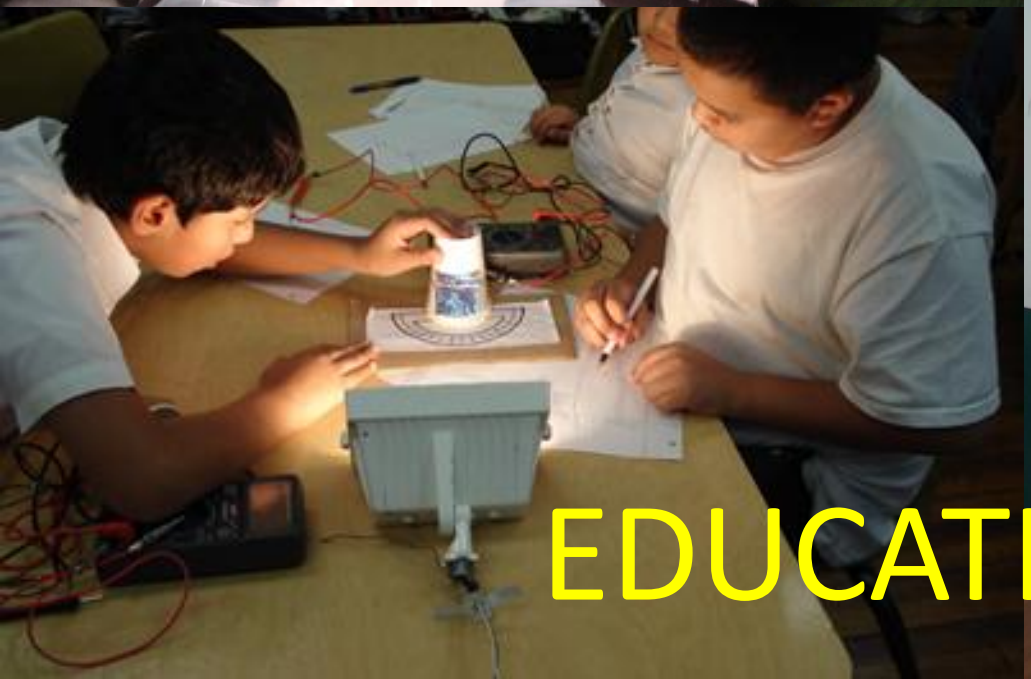


Note: Sum of components may not equal 100% due to independent rounding.

Source: EIA, *Renewable Energy Consumption and Electricity 2008 Statistics*, Table 1: U.S. Energy Consumption by Energy Source, 2004-2008 (July 2009).

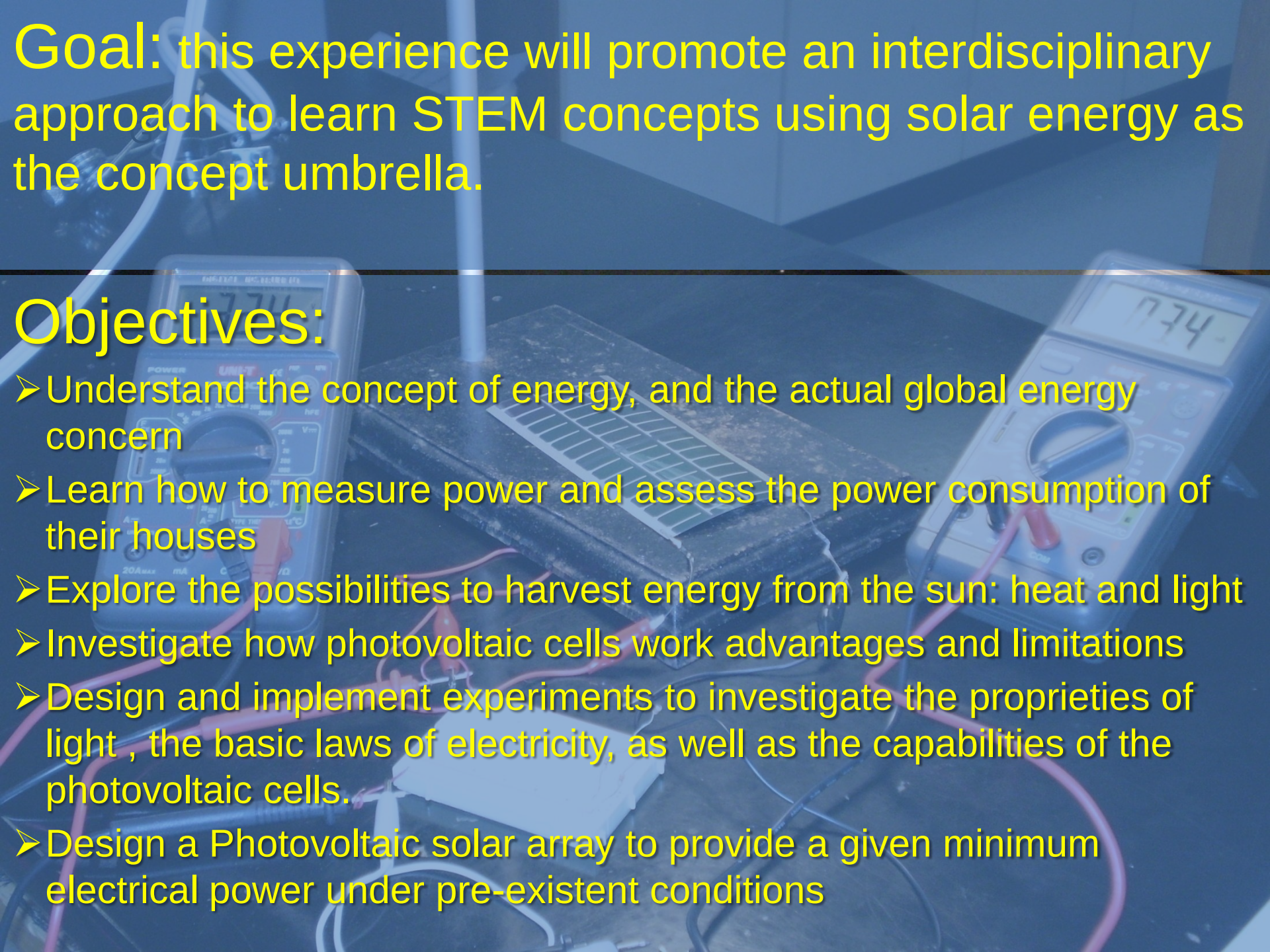
We can try in a different way!!!!

How to promote alternative energies in the population at large???



EDUCATION, is the way

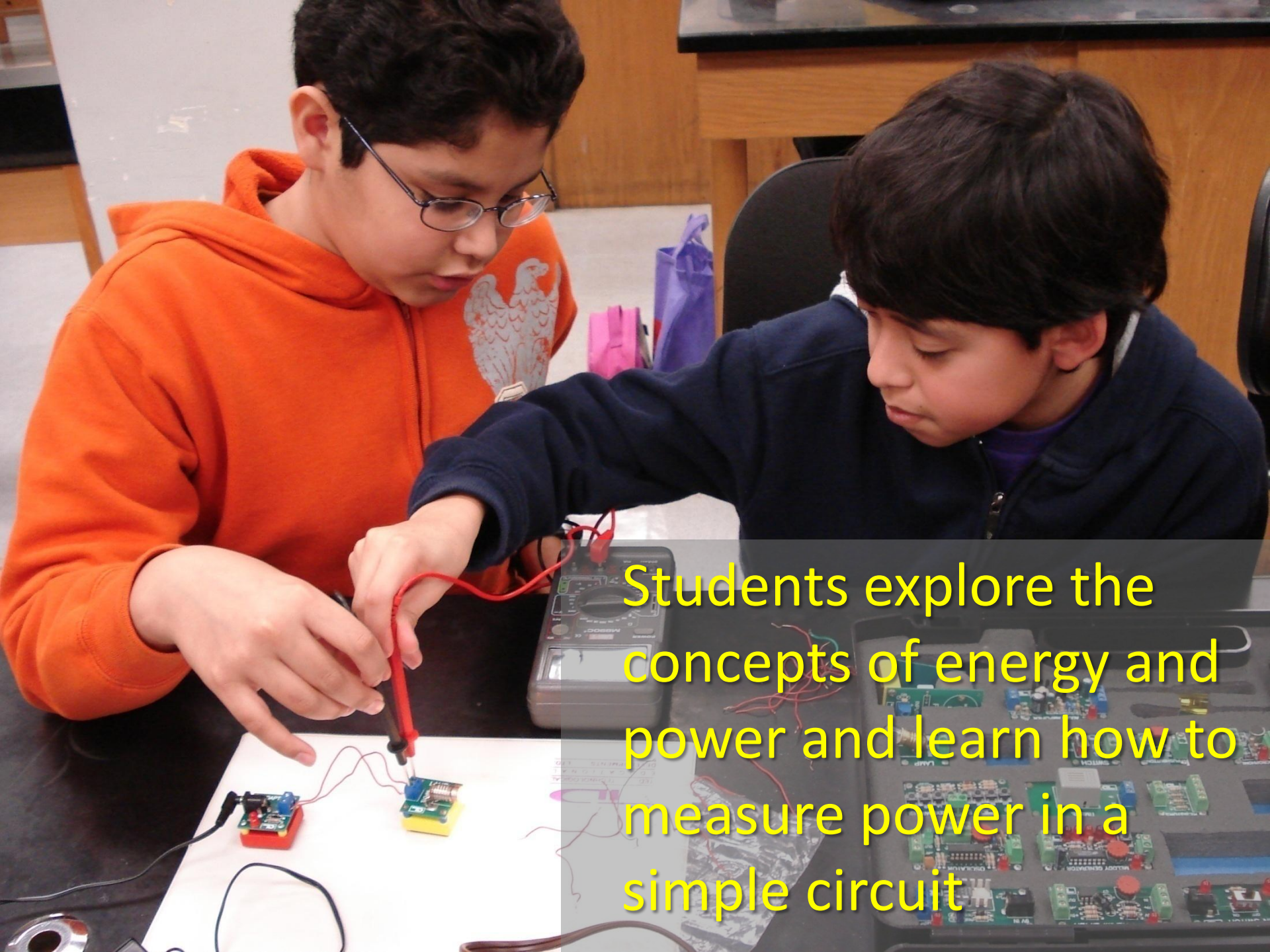

Solar energy at the school
A formal education experience

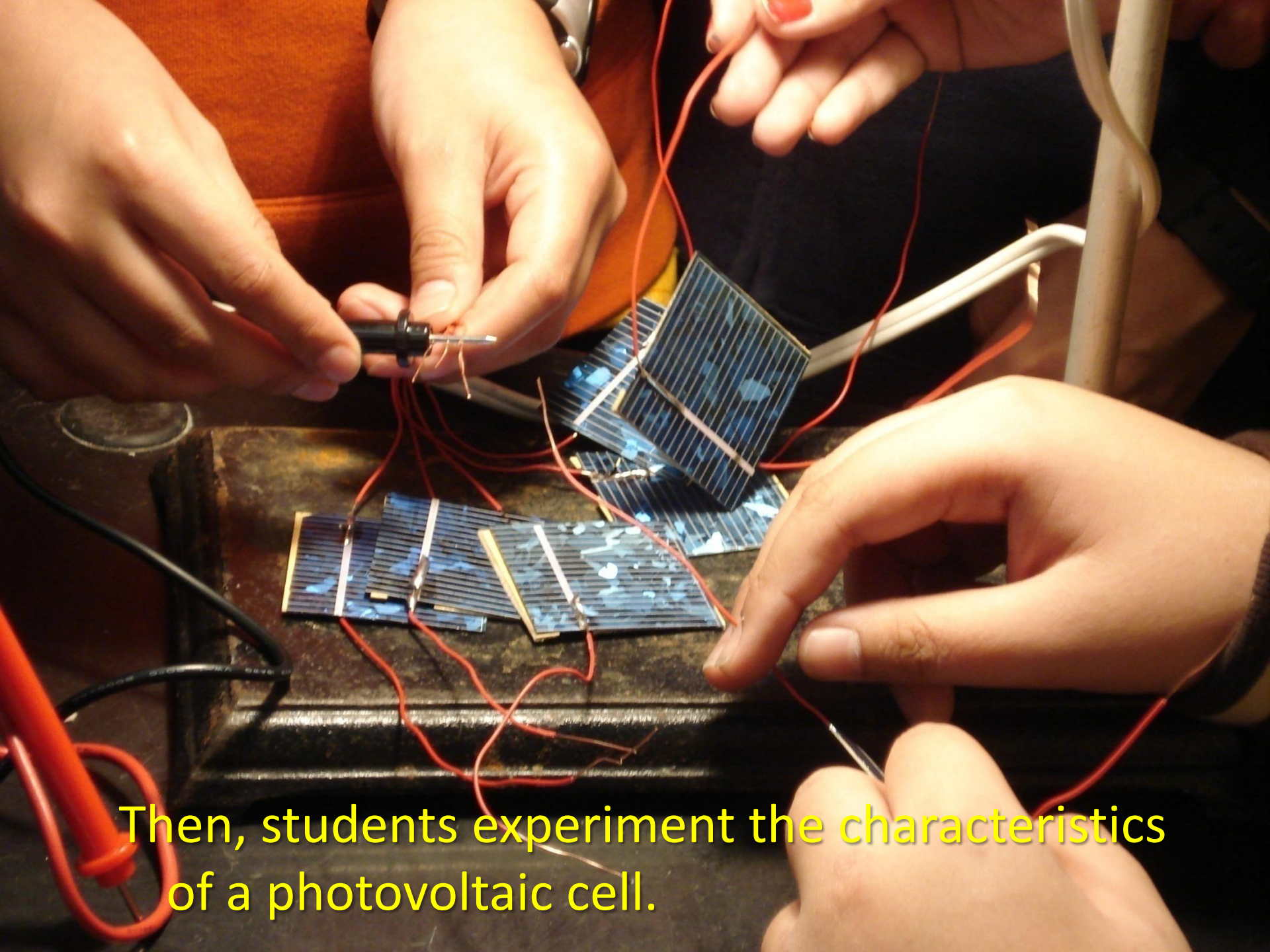


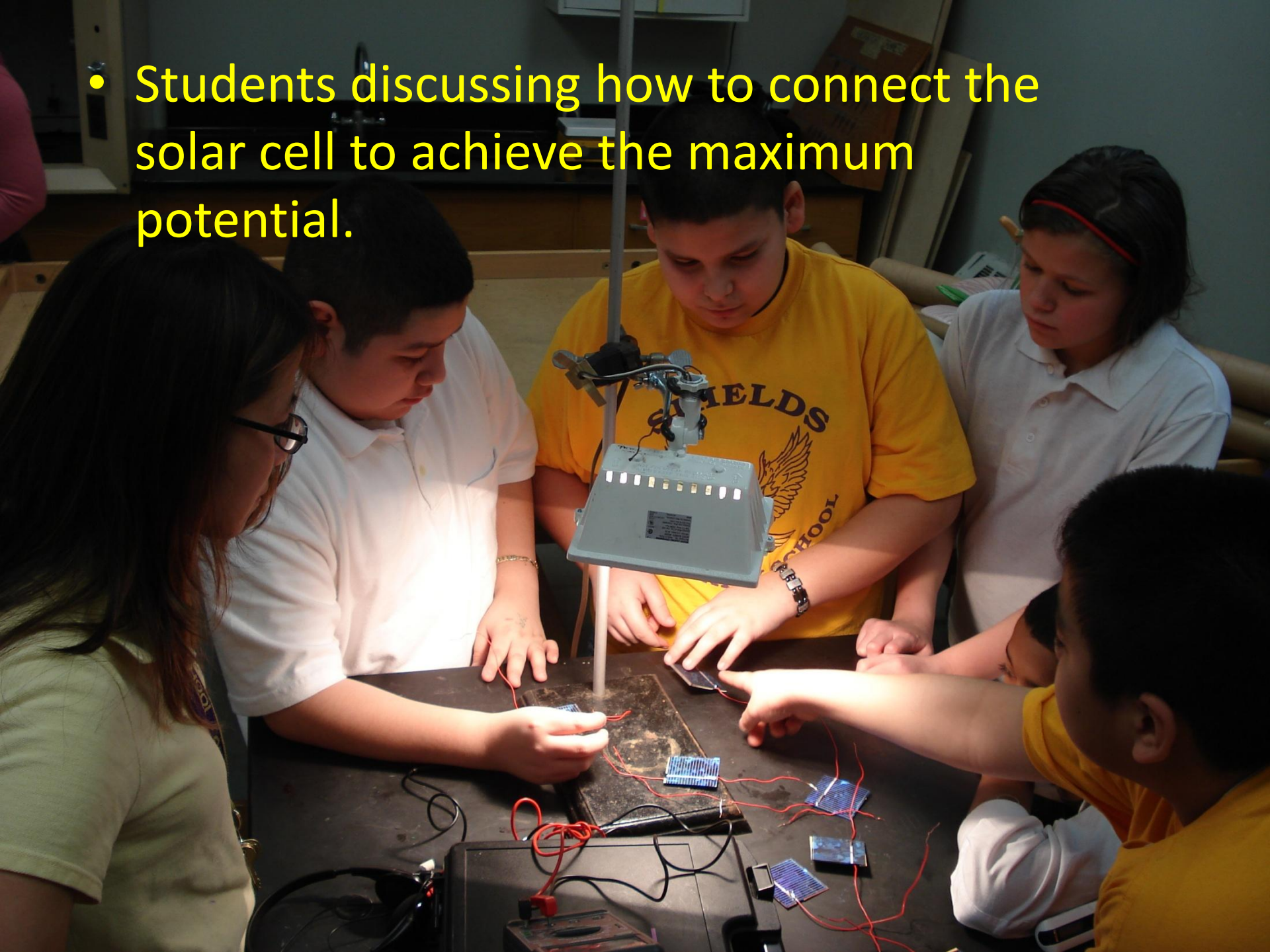
Goal: this experience will promote an interdisciplinary approach to learn STEM concepts using solar energy as the concept umbrella.

Objectives:

- Understand the concept of energy, and the actual global energy concern
- Learn how to measure power and assess the power consumption of their houses
- Explore the possibilities to harvest energy from the sun: heat and light
- Investigate how photovoltaic cells work advantages and limitations
- Design and implement experiments to investigate the proprieties of light , the basic laws of electricity, as well as the capabilities of the photovoltaic cells.
- Design a Photovoltaic solar array to provide a given minimum electrical power under pre-existent conditions

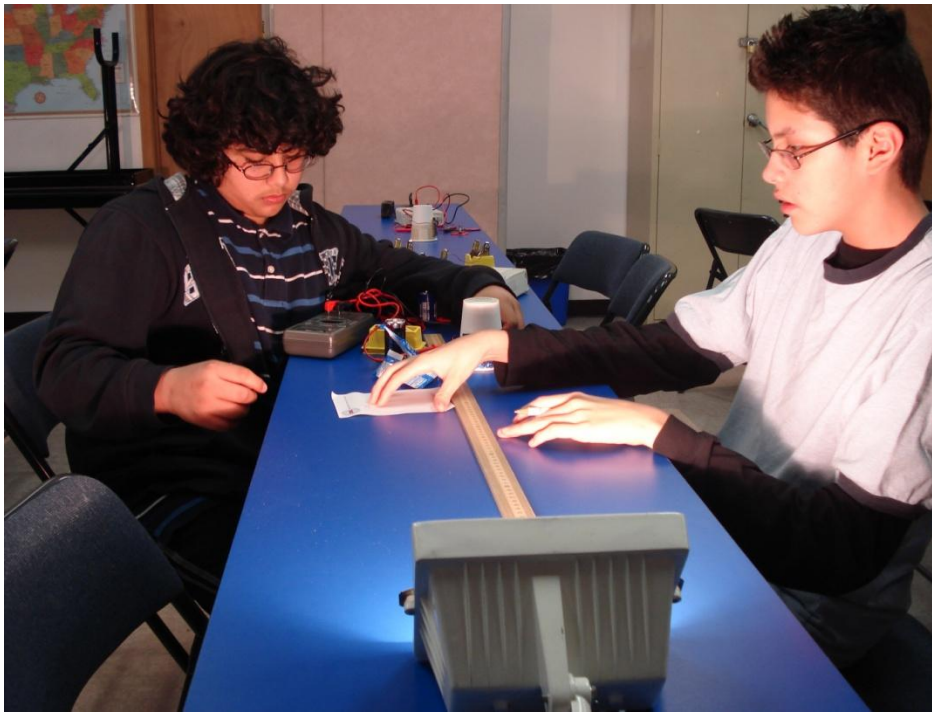

Students explore the concepts of energy and power and learn how to measure power in a simple circuit

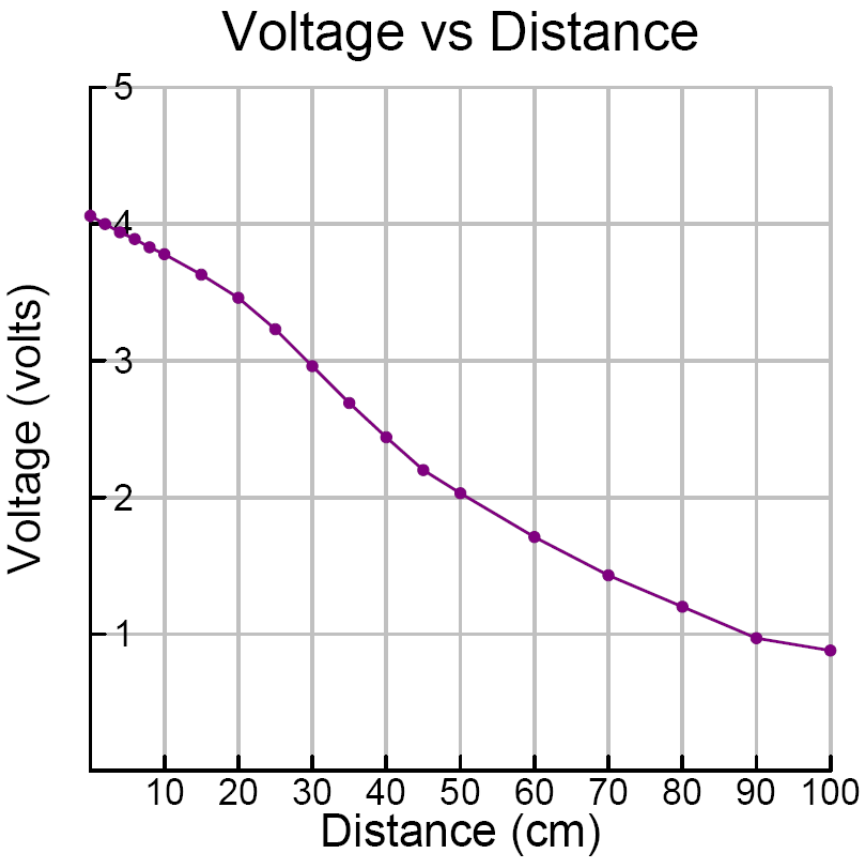

Then, students experiment the characteristics
of a photovoltaic cell.



- Students discussing how to connect the solar cell to achieve the maximum potential.

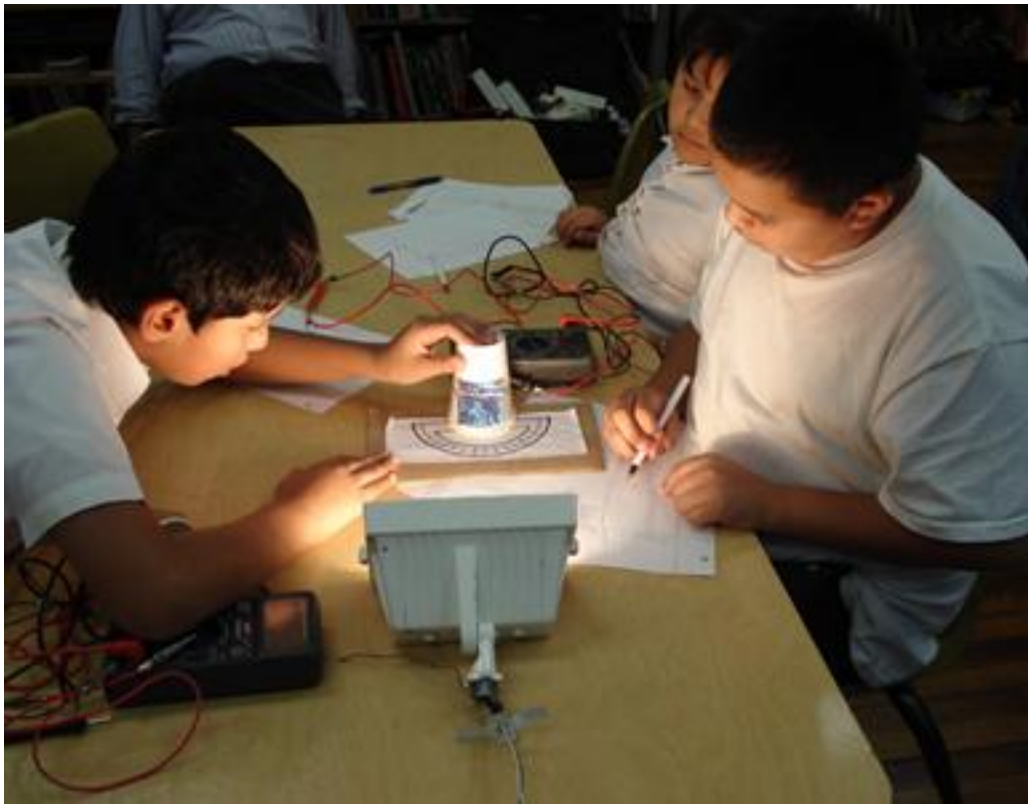
INVESTIGATION

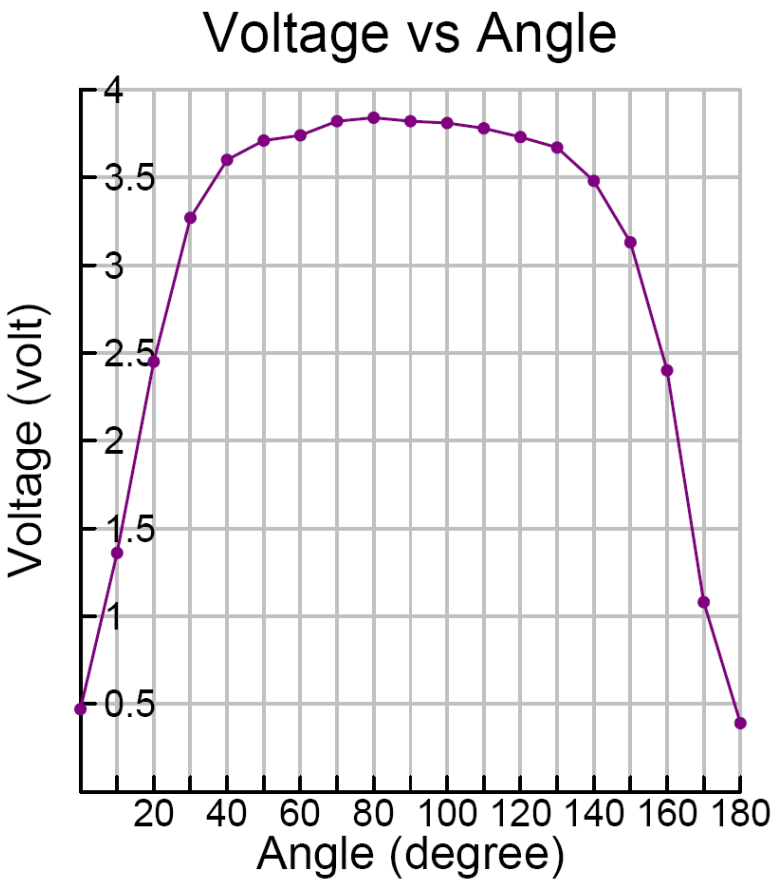




Students investigate the relationship between the energy converted for the photovoltaic cell and the distance from the source. After the data analysis they concluded that the energy collected by the cell is inverse-proportional to the distance

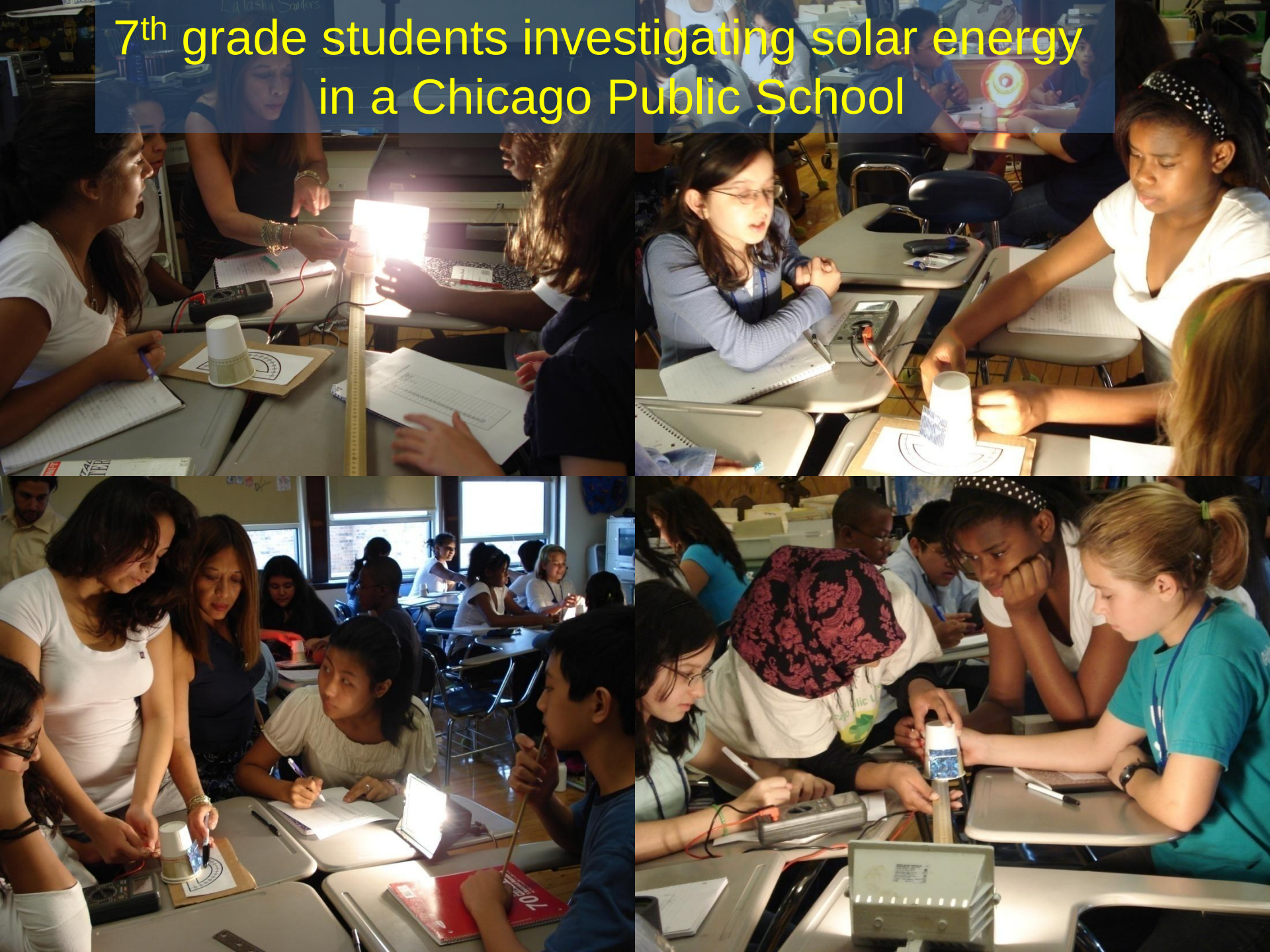
INVESTIGATION

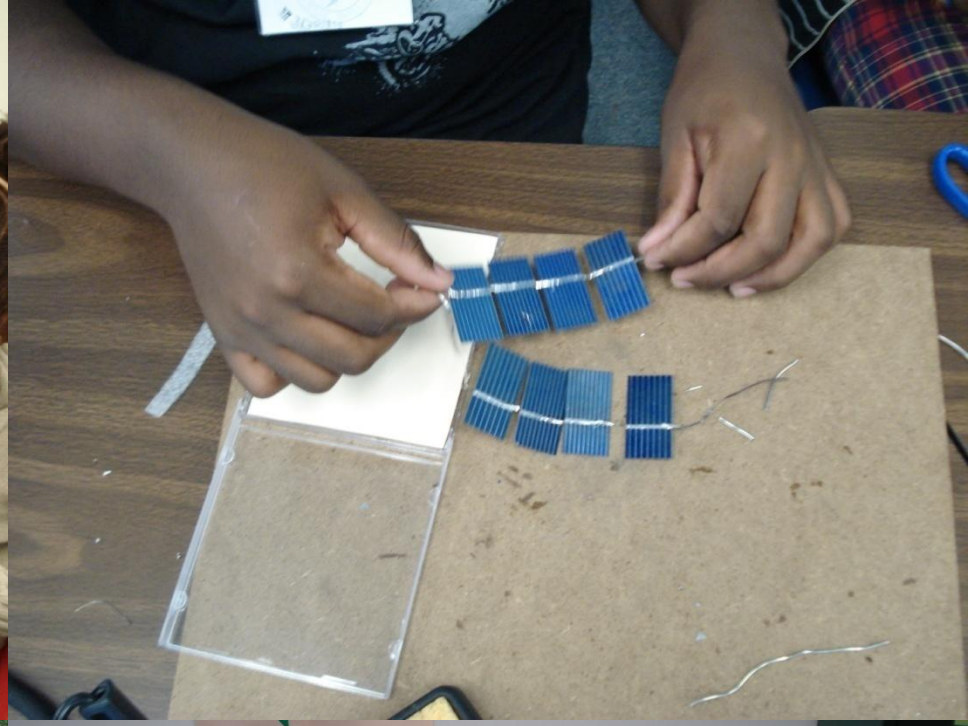
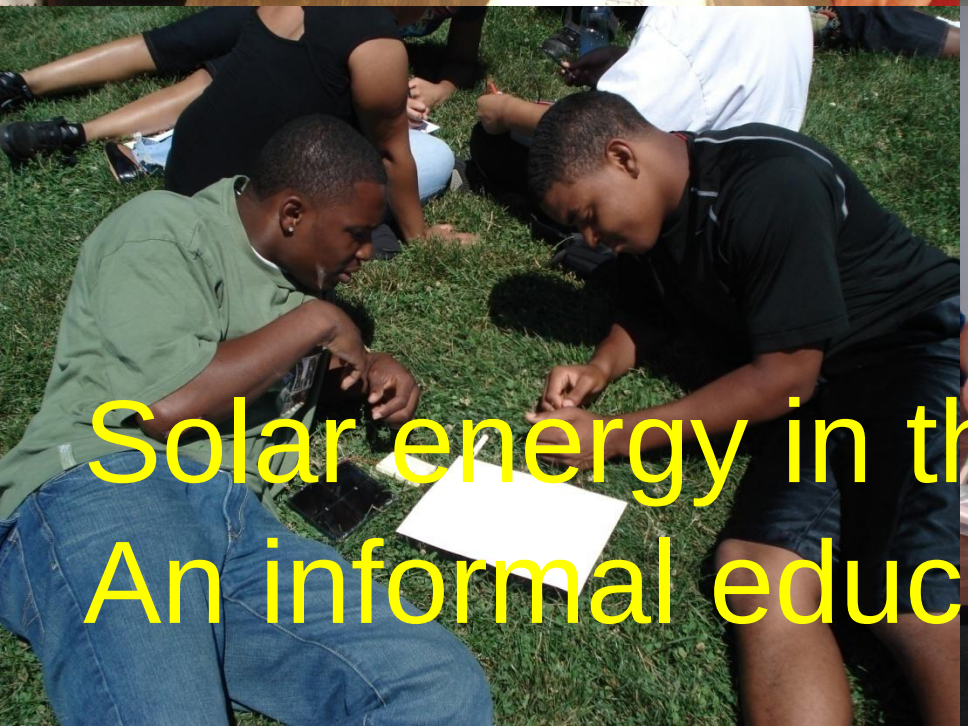




Students investigate the relationship between the energy converted for the photovoltaic cell and the incident angle of the light from the source. After the data analysis the students concluded that the energy collected by the cell depend strongly on the incident angle

7th grade students investigating solar energy in a Chicago Public School



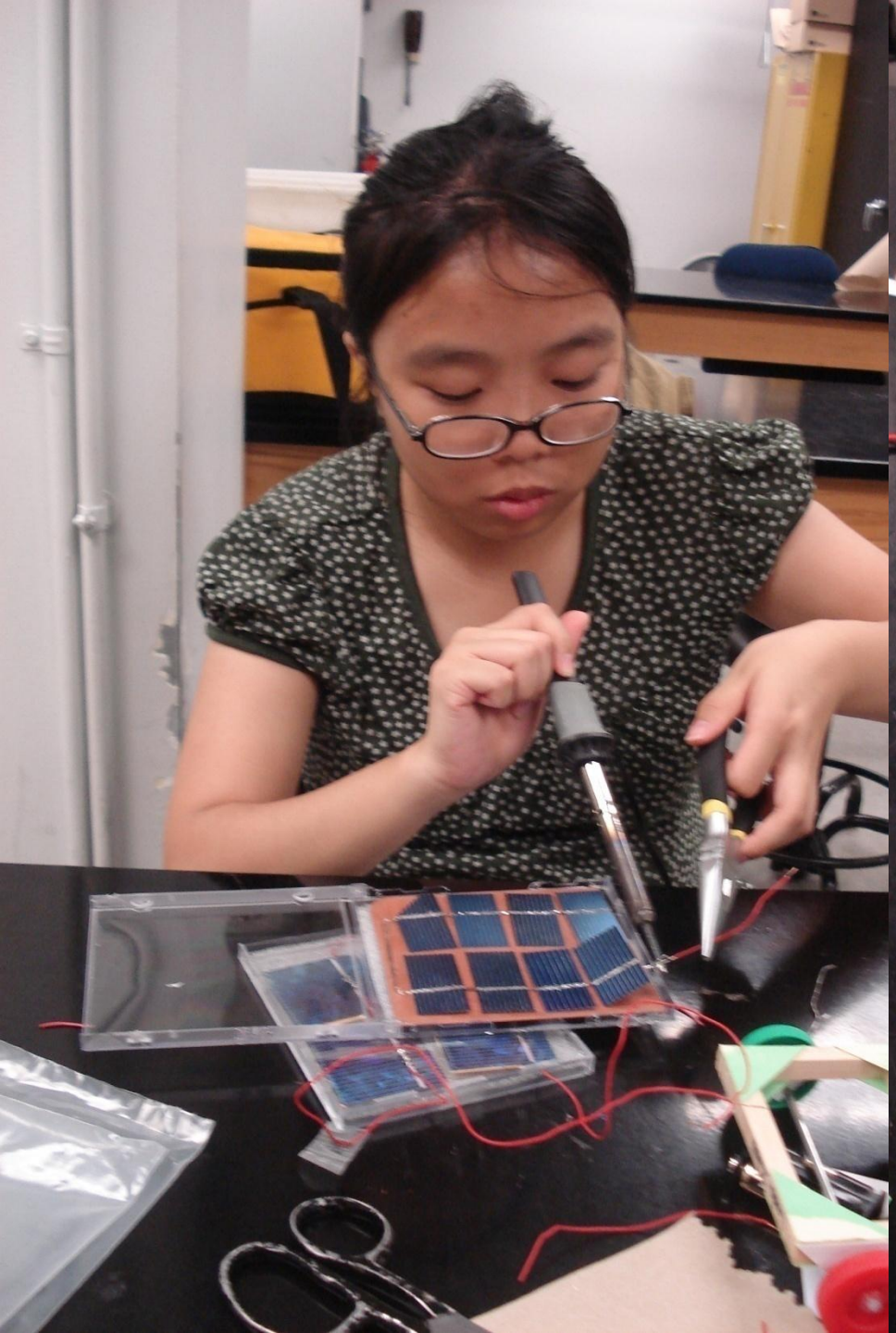

Solar energy in the community
An informal education experience

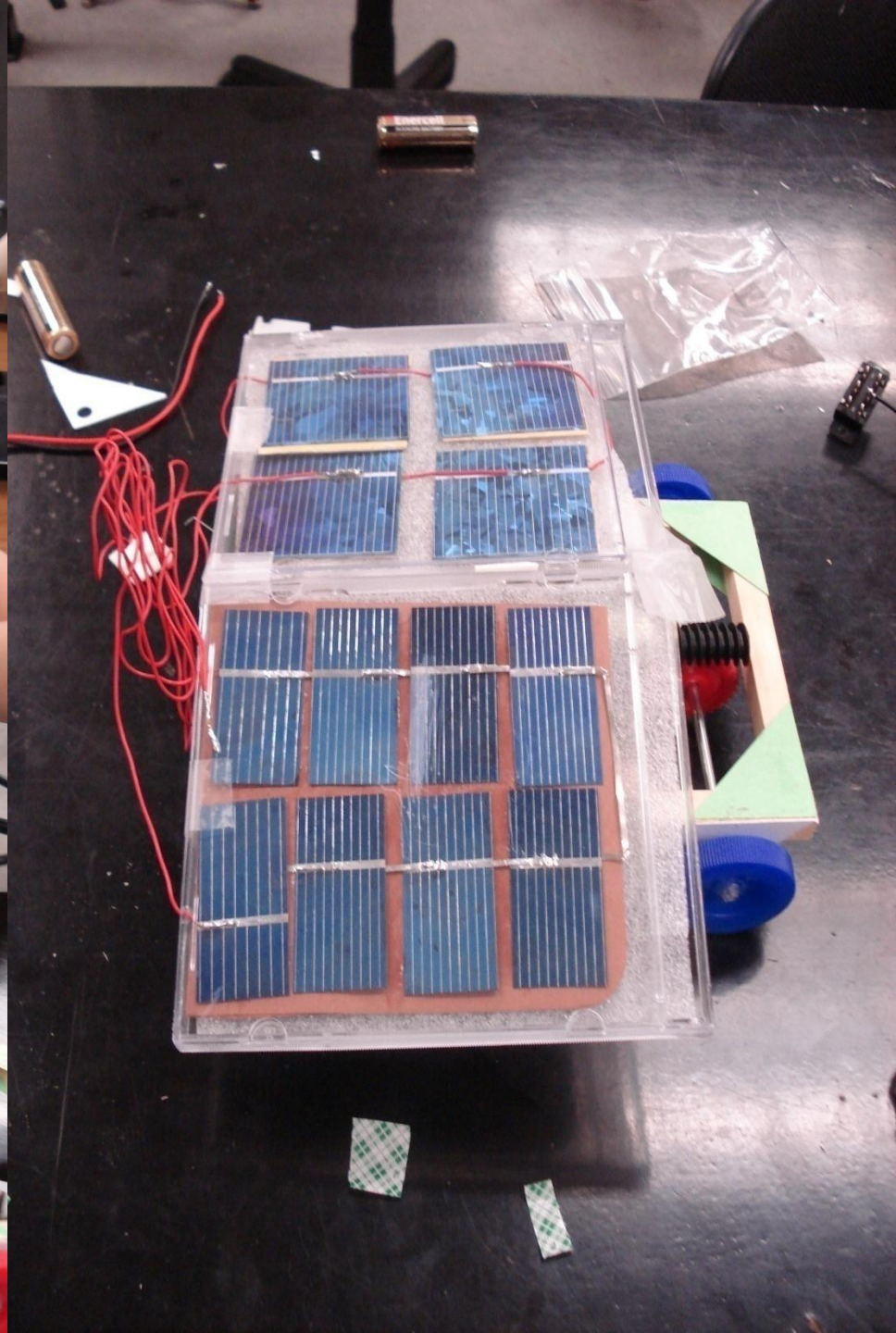


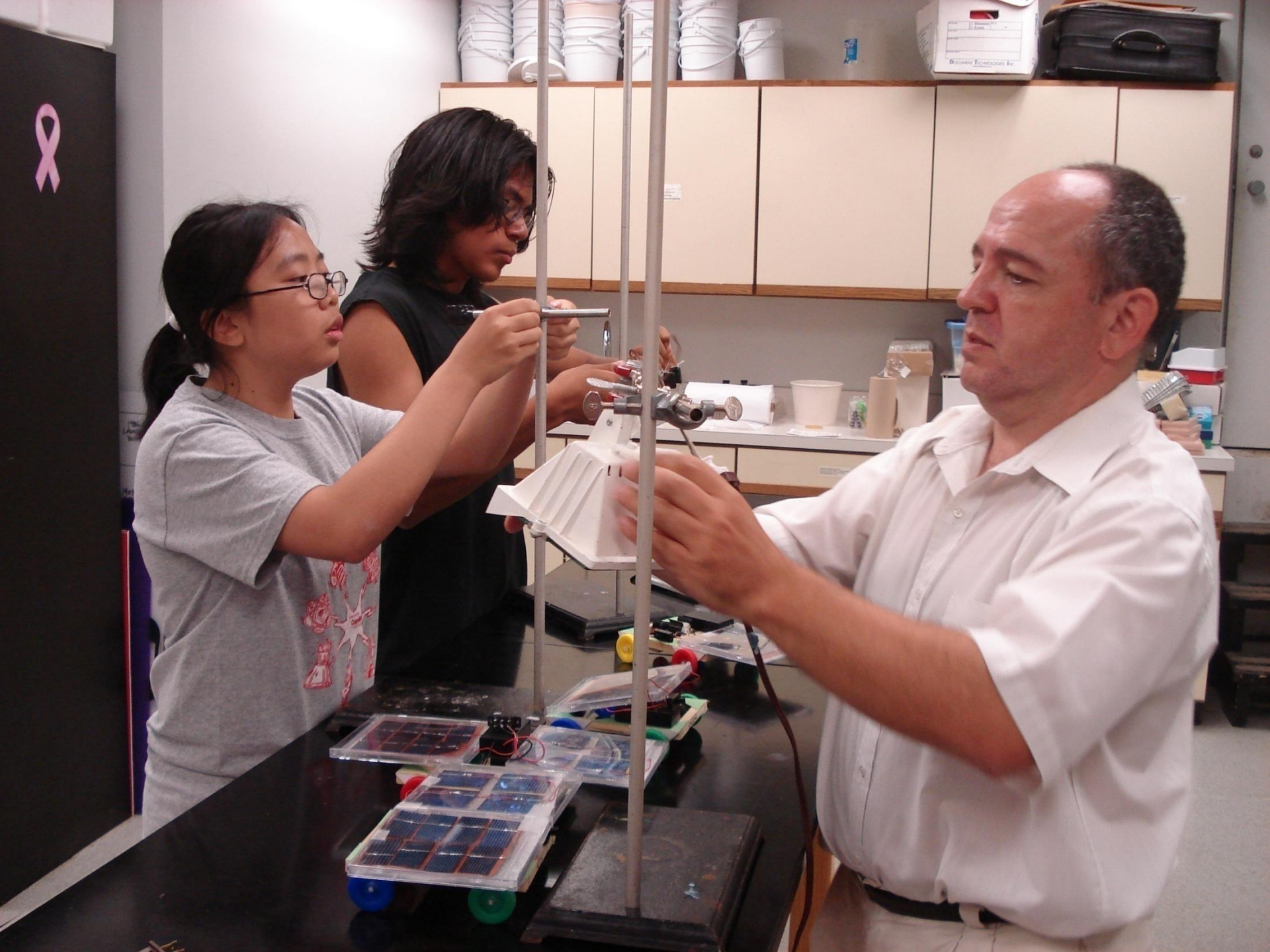


Darnell Weekly


Solar energy summer camp
An informal education experience







For more information about the alternative energies experience in formal and informal settings please, contact us

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